

Honey-Lindsey- Allison Creeks Watershed Project
1304-003
Final Project Report

Funding Source	Cash		In-Kind Contributions		Total	
	Approved Application Budget (\$)	Actual (\$)	Approved Application Budget (\$)	Actual (\$)	Approved Application Budget(\$)	Actual (\$)
WIRB	60,000	60,000	0	0	60,000	60,000
IA DNR			1,800	1,800	1,800	1,800
USDA-EQIP	2,269,363	296,289	0	0	2,269,363	296,289
Landowners	372,500	428,830			372,500	428,830
IFIP		2,390				2,390
FSA-CRP	0	113,929			0	113,929
Totals	2,701,863	901,438	1,800	1,800	2,703,663	903,238

The Project used all of its allotted WIRB funds to staff a full-time coordinator to promote and implement conservation practices that work to reduce nutrient delivery to the Mississippi River Basin. This coordinator worked for the Delaware SWCD, and also relied on other SWCD personnel, IDALS-DSC technicians, and NRCS staff to complete this project.

This Project was funded to assist in implementing a federal EQIP project, specifically the Mississippi River Basin Initiative for the Honey-Lindsey-Allison Creeks Watershed in Delaware and Clayton counties. The goal of the MRBI is to reduce nitrogen and phosphorous delivery to the river system, using a variety of land-treatment practices and nutrient management planning, which was linked to all contracts. This Project is estimated to have saved 1,238 tons of sediment annually, leading to a yearly drop in phosphorous delivery to the stream of 1,610 pounds. This does not include the savings produced annually by the manure storage that was constructed, as well as the benefits from following the recommendations of nutrient management plans in the hands of farmers. Bacteria delivery to the stream has undoubtedly been greatly reduced by removing the direct conduits to the stream by treating feedlots.

The Project had projected that it would use \$2,269,363 of EQIP funds from NRCS. By the end of the two years, \$296,289 of federal EQIP funds , plus \$113,929 of FSA-CRP were used for a wide range of conservation practices, and landowners made outlays of \$428,830 to get these practices installed. **An additional \$199,869 of EQIP funds were contracted for 2016 installation in the watershed, with an additional \$303,501 of projected expenditures from landowners.** While many of the practices were funded with substantial cost-share incentives, landowners still bore some major expense in installing what they did. This was most prevalent in the ag

waste improvements that were made. NRCS provided a fixed rate per unit of manure storage constructed, or per square foot of livestock housing built to get animals off of open lots. It was up to the landowner to then grade and prep the site, and to provide gates, fencing, bunks, waterers, and electrical components to allow the unit to function. The declining ag economy caused several farmers to pass on otherwise good projects that would have helped water quality while improving their operations.

The approval process for these Plans was changed drastically prior to the final sign-up of our MRBI project, which had a major effect on farmer interest and eligibility. Farmers had to have a completed CNMP prior to EQIP ranking consideration, versus the previous policy of being able to contract the CNMP simultaneous with the ag waste practice itself. This extended the timeline to get a practice installed. More importantly, the CNMP previously included suggestions for practices a farmer may want to consider for the betterment of their farm. New policy is that a plan for the entire farm where manure may be hauled must be planned, and all of those practices must be applied by the end of the ag waste contract. Rather than deal with that, most producers opted to walk away from making any improvements to their livestock operation. This was a major setback to the Project.

Water sampling was done with IA DNR assistance during the initial years of the MRBI Project. This ended in July of 2014. IADNR processed 22 samples over the course of this project at an average cost of \$81.82 to meet our budgeted goal of \$1800. Honey Creek and Dry Run Creek samples indicated that nitrate levels still continued to peak in late Spring and early Summer above the 10 mg/L level, corresponding with the period after application of nitrogen fertilizers to area crop fields. Nutrient management plans were written for all contract participants, which highlighted the need to account for nutrients in all manures and legume crops, and recommending split application of nitrogen, especially for those farming lighter soils. The project coordinator reviewed the contents of these plans with these farmers, and will continue to do so as they certify for 3 years how they follow these plans in order to receive contracted payments. Time will tell the effect this will have on stream nutrient levels.

Well samples continue to test below the drinking water standard, with spikes after major rain events. According to DNR, more data would be needed over a longer period of time to draw meaningful conclusions. As for bacteria, many of the ag waste projects pursued were in the areas surrounding those reaches of the stream shown to be at the highest readings for bacteria. The Allison Creek area of the watershed was not part of the monitoring program.

As alluded to above, FSA-CRP became a substantial contributor in the project area. This was for rebuilding existing CRP waterways that were up for renewal; several new, major waterway contracts; and some recent enrollments of large tracts of land into CRP-SAFE, a grass-based seeding; and CRP-Pollinator, seeded to forbs and bee-friendly vegetation.

WIRB funds accounted for 7% of the total project cost. The Delaware SWCD appreciates the opportunity to leverage the funds it received to staff this project, which allowed it to promote the available federal funds to get conservation practices on the ground. And what's more, this project was able to address several key livestock production facilities that will yield water quality improvements for years to come.

Summary: Watershed Improvement Funds			
Grant Agreement Budget Line Item	Total Funds Approved (\$)	Total Funds Expended (\$)	Available Funds (\$)
Salary/ Benefits	60,000	60,000	0
Totals	60,000	60,000	0
Difference	0	0	0

The Watershed Improvement Review Board funded only salary for this project. Enabled by these funds to staff a full-time coordinator for its Mississippi River Basin Initiative (MRBI) Project, the Delaware SWCD was able to promote the federal project, and to install an array of conservation practices using EQIP to an extent greater than originally planned. All of the funds for salary were used.

Practice or Activity	Unit	Approved Application Goal	Accomplishments	Percent Completion
Ag Waste Facilities	number	3	5	167%
CRP waterways	acres	0	20.5	extra
Waterways	acres	5	14.4	288%
Water & Sediment Basins	number	4	6	150%
Grade Stabilization Structures	number	2	2	100%
Cover Crops	acres	82	651	793%

As the above chart indicates, this Project was very successful in almost every aspect. The goals established in our initial application were met or exceeded in all categories. The initial application was for streambank protection within the watershed to supplement the MRBI practices offered; after streambank protection was disallowed, the application was then modified to allow the funds to provide staff to further promote the MRBI practices. Because of that modification, we have taken the liberty to adjust the initial goals of this project to include part of the goals of Project 1234-016. These practices were all funded with dollars from sources other than WIRB, including EQIP, IFIP, WQI, CRP, or landowner investment.

All practices funded with EQIP funds through the Mississippi River Basin Initiative (MRBI) required the producer or landowner to develop a Nutrient Management Plan (NMP), or if it involved an ag waste system, a Comprehensive Nutrient Management Plan (CNMP). These plans were written by a qualified agronomist, and provide a blueprint for responsible use of animal manure sources and commercial fertilizers. Once a plan was developed, farmers proceeded with their conservation practice, but also were required to, and were compensated for, documenting that they were following the nutrient recommendations for at least one year and up to three years. By following recommendations from someone who was not trying to sell them more fertilizer, these producers saved money while keeping countless units of nitrogen and phosphorous out of the stream. The approval process for these

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The Project made a determined effort to address livestock sites that were likely sources of nutrient movement to the stream. Many of these were in the Honey Creek watershed, an area identified in the application as being heavy in livestock with many feeder streams to serve as conduits. One site with a direct conduit to the Allison watershed was treated by closing lots and putting the cattle into a building with storage under the building; a site in Honey Creek was treated in similar fashion. One site constructed a round concrete tank to store runoff from his dairy operation. Another site will build a solid manure stacking facility, and a small round tank to capture the liquids. All of the sites we treated were contributing to the high nutrients and bacteria in the stream after rain events.

The coordinator was working hard to get several other livestock sites addressed as well. These sites were visited by Area NRCS staff with the coordinator; various scenarios were drawn up and considered before the deteriorating farm prices this season caused the producers to reluctantly decline our assistance. All of our ag waste contracts resulted in the producer investing a sizable amount of their own funds, which also provided them with a more efficient operation when completed.

Waterways were a major product of this project. Over 14 acres of waterways were built with primarily MRBI funds. 20.5 acres of new CRP waterways were built in the project area.

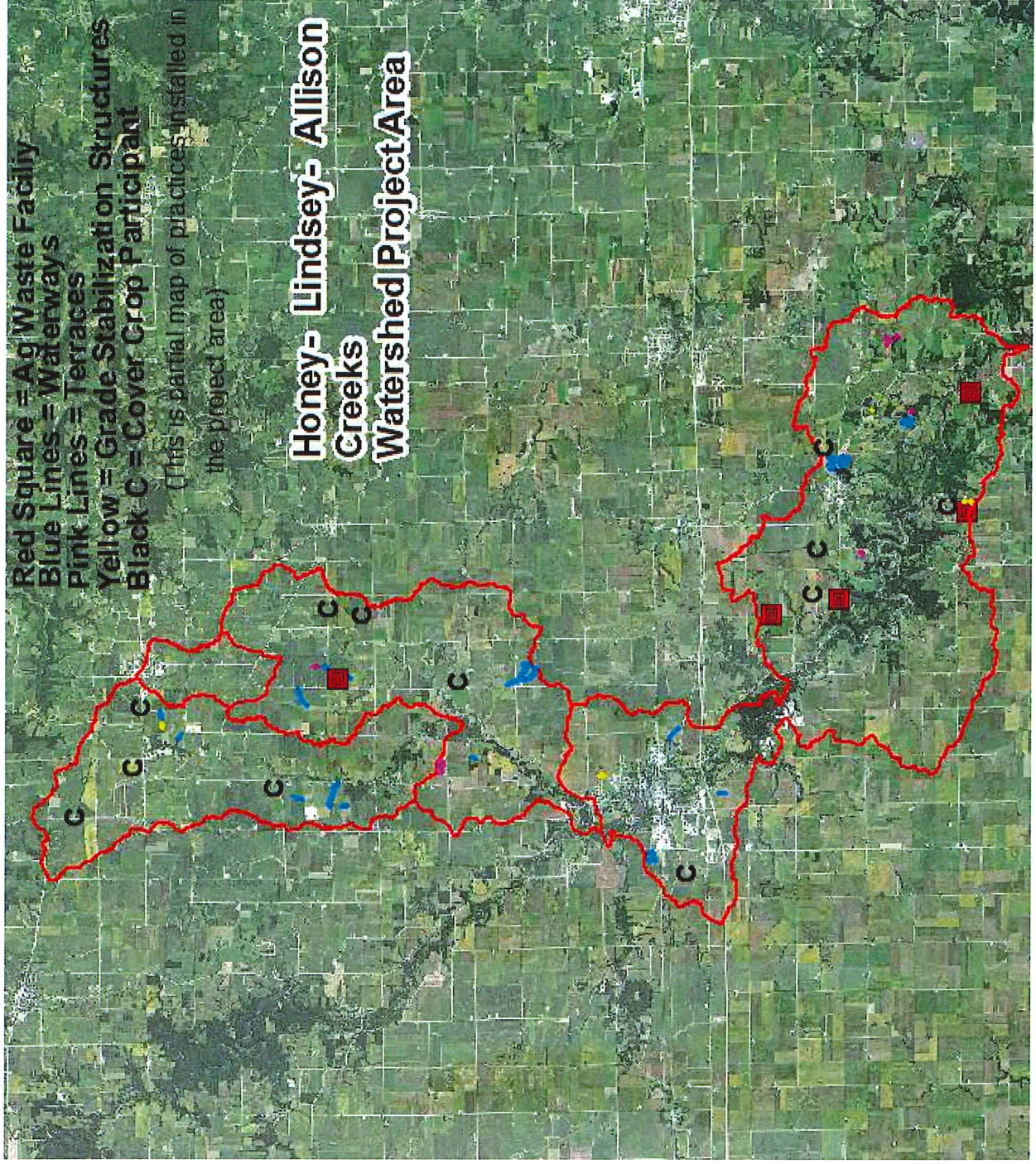
Basins and grade stabilization structures were used where applicable, and to about the level planned. Cover crops have really gained in usage in the area. Four producers used EQIP to fund three consecutive years of cover crops. One of those is a major seed corn sales rep in the area, offering lots of positive exposure for the cover crop concept going forward. Several producers used WQI or IFIP rather than commit to a contract for a given amount of acres.

No till planting on 814 acres was contracted using EQIP. This could have been better had NRCS maintained its incentive rate at its original level. Rates were cut in half since the start of the MRBI project, limiting farmer's willingness to commit to a contract to do it for three years.

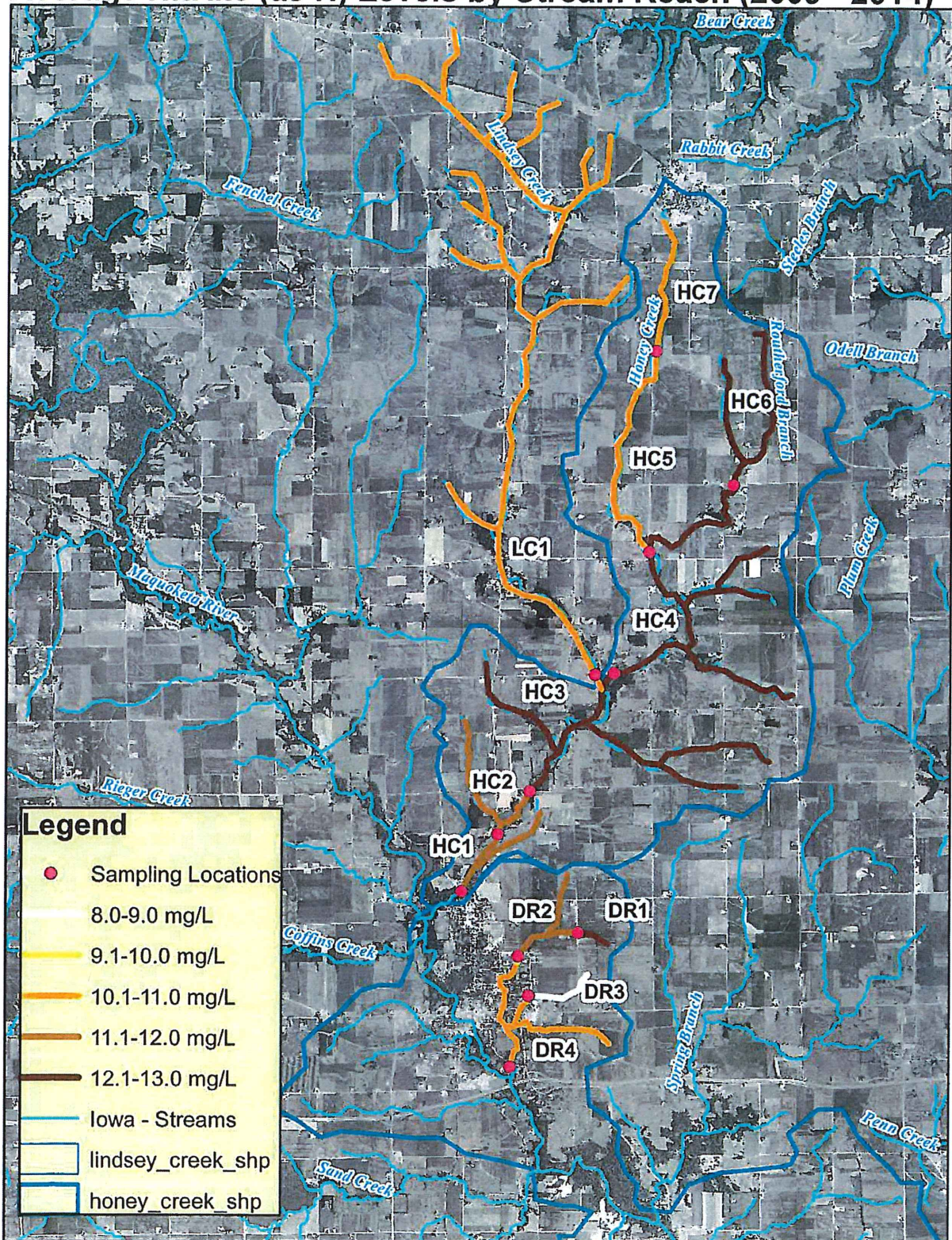
All of these projects led to annual sediment savings of 1,238 Tons, and resulting phosphorous savings of 1,610 pounds annually. There is no formula to estimate the reductions for nutrient reductions from the ag waste structures built and nutrient plans followed, but they without a doubt led to major reductions in nitrogen, phosphorous, and bacteria delivery to the streams, leading to better water quality in the Honey-Lindsey-Allison Creek watershed area.

Red Square = Ag Waste Facility
Blue Lines = Waterways
Pink Lines = Terraces
Yellow = Grade Stabilization Structures
Black C = Cover Crop Participant
(This is partial map of practices installed in the project area)

Honey- Lindsey- Allison Creeks Watershed Project Area



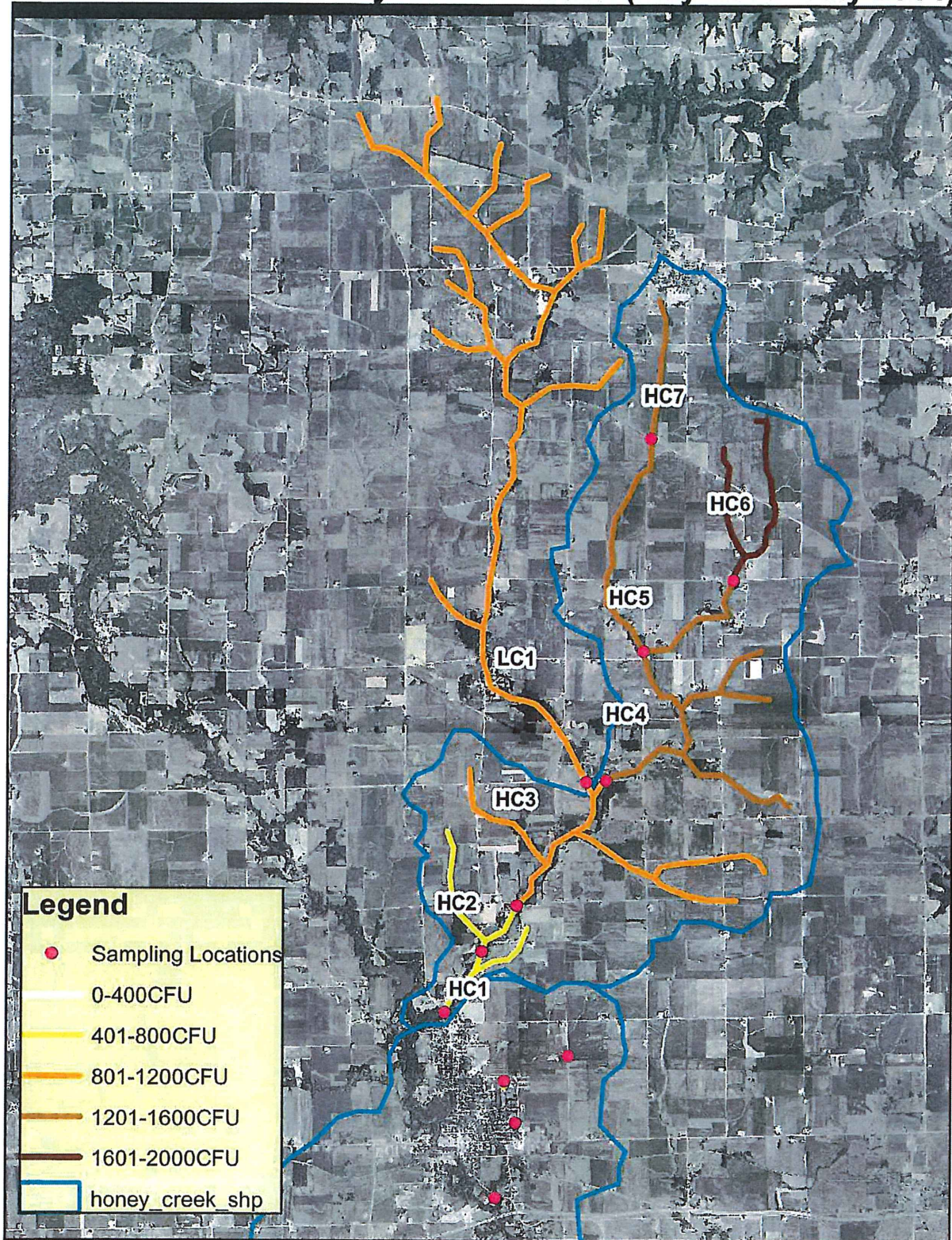
Average Nitrate (as N) Levels by Stream Reach (2009 - 2014)



0 1 2 4 Miles



Median E. Coli Levels by Stream Reach (May 2011- July 2014)



Dry Run Creek Surface Water Quality

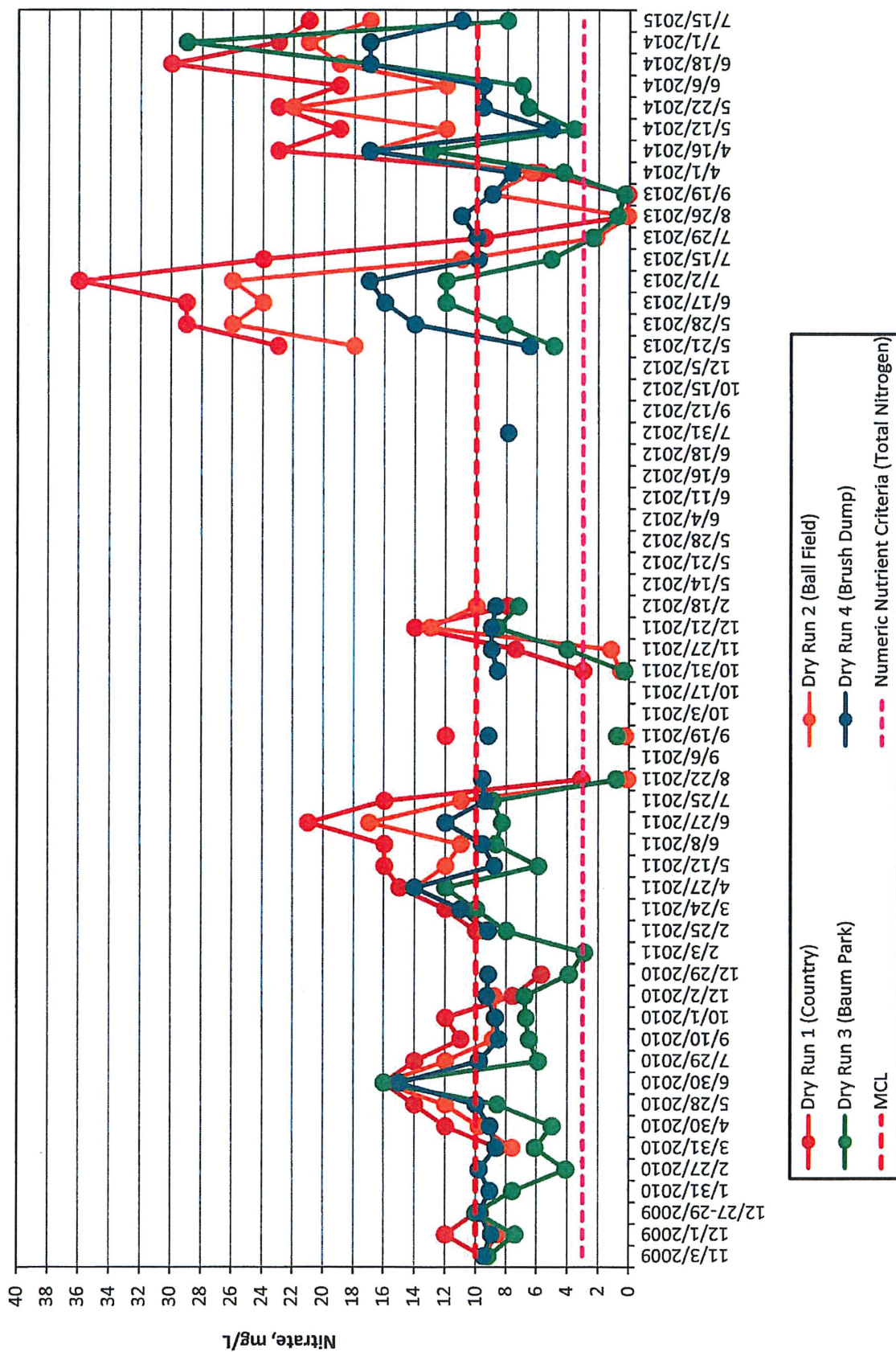


Figure 4

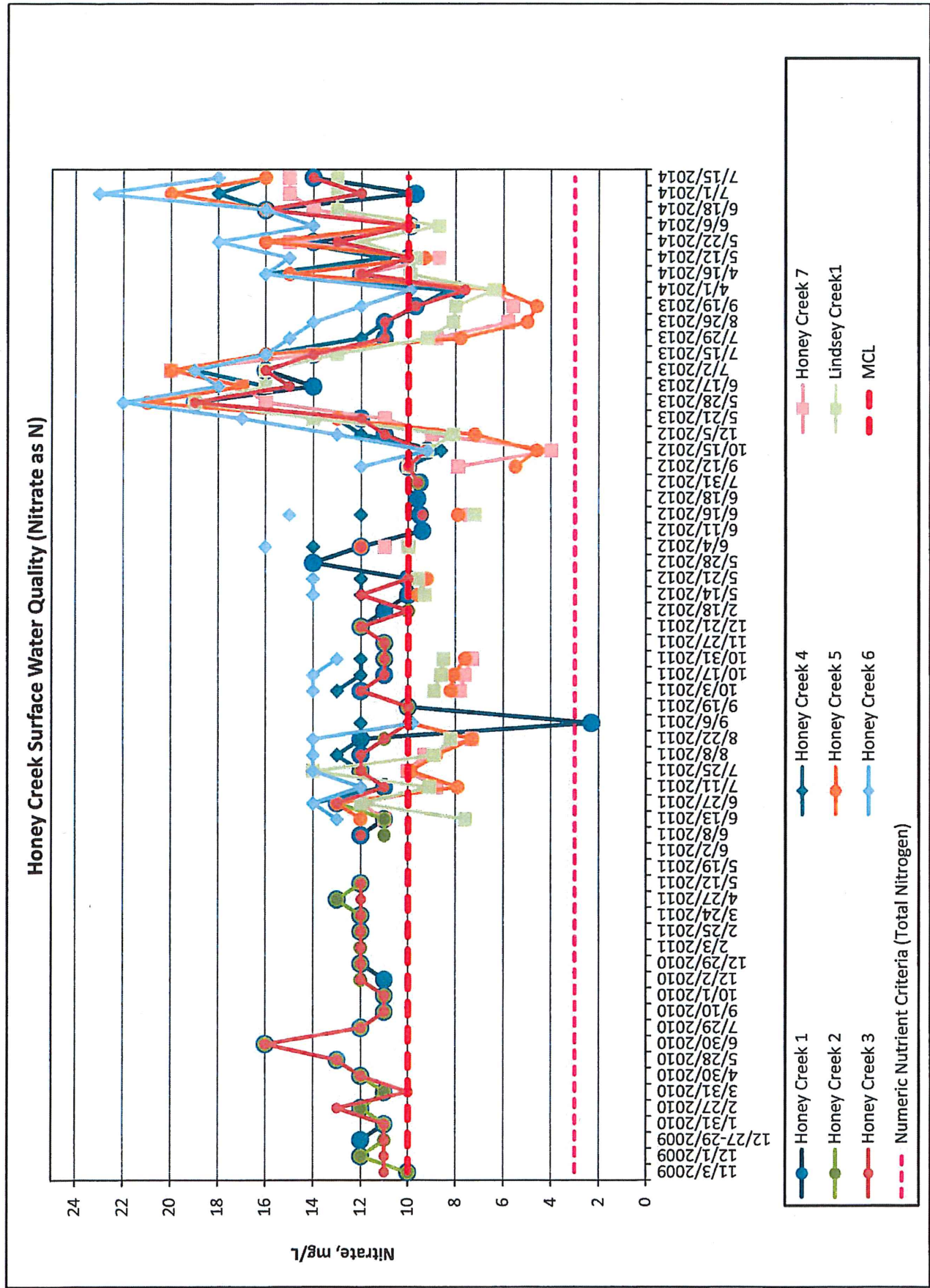
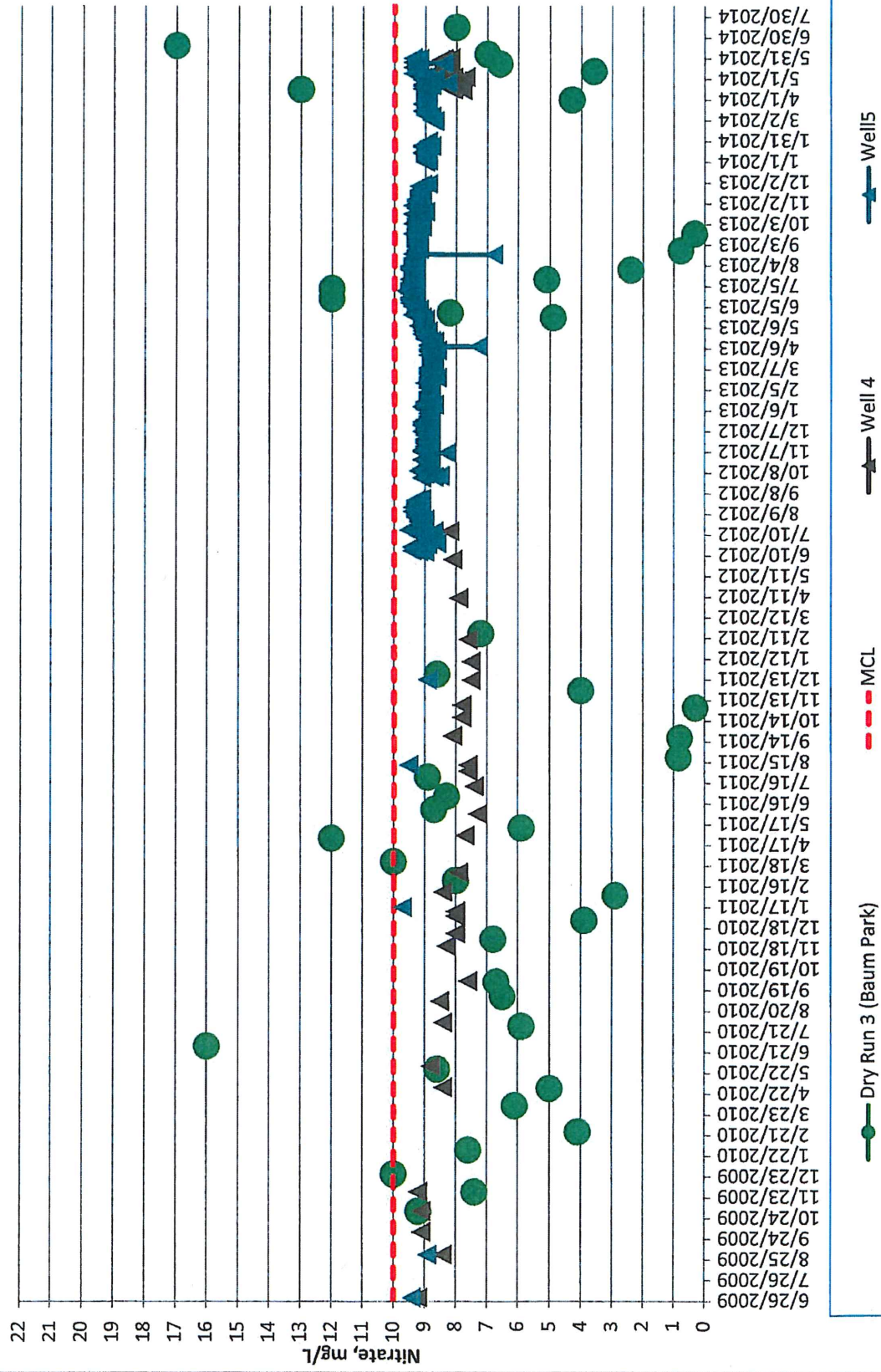


Figure 4

Nitrate Concentrations Dry Run Surface and Groundwater at Baum Park



*Well 5 has not been sampled consistently because of elevated nitrates

Nitrate Concentrations in Manchester's Wells Delaware County

